IS 13188 (2002): Textiles - Jute Yarn Used as Filler in Woven Carpets [TXD 3: Jute and Jute Products]

BLANK PAGE

IS 13188 : 2002
(Reaffirmed 2000)

भारतीय मानक

वस्त्रादि — बुने हुए कालीनों के लिए भरण सामग्री के रूप में प्रयुक्त तथा अन्य उपयोगों के लिए पटसन का सूत (एकल तथा प्लाई वाला) — विशिष्टि

(पहला पुनरीक्षण)

Indian Standard

TEXTILES — JUTE YARN (SINGLE AND PLY) USED AS FILLER IN WOVEN CARPETS AND FOR OTHER USES — SPECIFICATION

(First Revision)

ICS 59.060.10;59.080.60

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

April 2002

Price Group 3

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Jute and Jute Products Sectional Committee had been approved by the Textile Division Council.

This standard originally published in 1991 has been revised on the basis of the experience of the industry. The standard now covers both single and ply yarn used as filler in woven carpets and for other uses. The yarn has been graded as A, B, C or D Grade depending upon its conformance to the applicable requirements.

The composition of the Committee responsible for formulation of this standard is given in Annex B.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

TEXTILES — JUTE YARN (SINGLE AND PLY) USED AS FILLER IN WOVEN CARPETS AND FOR OTHER USES — SPECIFICATION

(First Revision)

1 SCOPE

This standard prescribes the requirements of four grades of jute yarn (single and ply) used as filler in woven carpets and for other uses.

2 REFERENCES

The following Indian Standards contain provisions which through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	*Title*
271 : 1987	Grading of white, Tossa and Daisee uncut Indian jute (*third revision*)
570 : 1964	Methods for determination of universal count of jute yarn (*revised*)
832 : 1985	Methods for determination of twist in yarn (*first revision*)
1670 : 1991	Textiles — Yarn — Determination of breaking load and elongation at break of single strand (*second revision*)
2508 : 1984	Specification for low density polyethylene films (*second revision*)
2969 : 1974	Method for determination of oil content of jute yarn and fabric (*first revision*)
5476 : 1986	Glossary of terms relating to jute (*first revision*)

3 TERMINOLOGY

For the purpose of this standard, the definitions given in IS 5476 shall apply.

4 GRADE

4.1 The jute yarn (single or ply) will be graded as A, B, C or D grade depending on its conformance to the applicable requirements.

5 MANUFACTURE

5.1 Jute Fibre

The jute fibre used in the manufacture of the yarn of Grade A shall be of superior quality, free from defects like roots and specks and shall be of uniform colour on the brighter side. Jute fibre of good quality generally known as CBC batch and of medium quality generally known as hessian batch shall be used for manufacture of the yarns of Grades B and C respectively.

5.2 Yarn

The yarn shall be either single yarn evenly twisted with 'Z' twist or ply yarn evenly twisted with 'S' twist.

5.3 Knots

The knots shall be well made without excessive tails and so formed that they will neither become unified nor cause any obstruction in the subsequent processing.

6 REQUIREMENTS

6.1 Linear Density

The linear density of yarn (single or ply) when tested according to IS 570 shall be as agreed to between the buyer and the seller or as declared by the manufacturer subject to a tolerance of ± 5 percent for Grades A and B and ± 7.5 percent for Grades C and D.

6.1.1 The coefficient of variation percent (CV percent) of linear density of single or ply yarn of various grades shall not exceed the values given in Tables 1 or 2 respectively.

6.2 Quality Ratio

6.2.1 The single or ply yarn of various grades shall conform to the requirements of average quality ratio given in Tables 1 or 2. The yarn of Grade A and B shall also conform to the requirement of lowest quality ratio calculated as under:

$$\text{Quality Ratio} = \frac{100 \times \text{Breaking Load (lb)}}{\text{Actual Grist (lb)}}$$

OR

$$\text{Quality Ratio} = \frac{100 \times \text{Breaking Load (kg)} \times 2.204}{\text{Linear Density in tex} \times 0.029\,03}$$

Lowest Quality Ratio = Quality ratio calculated based on lowermost 5 individual breaking load values

6.2.1.1 The breaking load of yarn shall be determined by the method given in IS 1670.

6.2.2 The coefficient of variation of the breaking load of yarn shall not exceed the values given in Tables 1 or 2.

6.3 Twist

The turns per metre of yarn (single or ply) when tested according to IS 832 shall be 3040 divided by the square root of linear density in tex subject to a tolerance of ±10 percent on the average.

6.4 Moisture Regain

6.4.1 The maximum permissible average moisture regain when tested according to the method given in **A-1** shall be as under:

a) Up to 550 tex — 16 percent

b) Above 550 tex — 18 percent

6.4.2 The contract moisture regain shall be 14 percent.

6.5 Oil Content

The maximum oil content in the yarn shall not exceed 2 percent for Grades A and B and 3 percent for Grades C and D respectively when tested on dry de-oiled material basis according to IS 2969.

6.6 Corrected Net Mass

The corrected net mass of the package containing spools/cones when determined according to **A-2** shall not be less than the contract mass of the package.

NOTE — Contract mass of a package is calculated as follows:

Contract mass of a package = Nominal mass of yarn in each cone/spool at 14 percent moisture regain excluding the tare of spool/cones × total number of spools/ cones in the package

6.7 Freedom from Defects

The yarn of Grades A and B shall be free from slubs, bad knots, knots with long tails, loose ends and stains, while those of Grades C and D shall be reasonably free from such defects.

7 PACKING

Unless otherwise agreed to between the buyer and the seller, the yarn shall be of continuous length and tightly wound on spools or cones. The size and weight of the spools or cones shall be as agreed to between the buyer and the seller.

8 MARKING

8.1 Each package shall be marked with the following:

a) Name of the material;

b) Linear density and grade of yarn;

c) Net mass of the package;

d) Month and year of manufacture; and

e) Indication of the source of manufacture including the country of origin.

8.2 BIS Certification Marking

The package may also be marked with the Standard Mark.

8.2.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act*, 1986 and the Rules and Regulations made thereunder. The details of conditions under which a licence for the use of the Standard Mark may be granted to the manufacturers or producers may be obtained from the Bureau of Indian Standards.

9 SAMPLING

9.1 Lot

The packages of jute yarn of same type and grade weighing 10 tonnes or part thereof delivered to one buyer against one despatch note shall constitute a lot.

9.2 The conformity of a lot to the requirements of this standard shall be determined on the basis of the tests carried out on the samples selected from the lot.

9.3 Unless otherwise agreed to between the buyer and the seller ten spools/cones shall be selected at random from a lot.

9.3.1 Five samples shall be prepared from each selected cone/spool for determining linear density and its CV percent, quality ratio, lowest quality ratio and breaking load CV percent.

9.3.2 For determining twist per metre, at least 20 test specimens shall be prepared. As far as possible an equal number of test specimens shall be prepared from each cone/spool selected.

9.3.3 For determining moisture regain percent, 10 test specimens shall be prepared out of the cones/spools

selected. The test specimens shall be distributed evenly amongst the cones/spools selected.

9.3.4 For determining oil content 2 test specimens shall be prepared out of the cones/spools selected.

9.3.5 Sample tested for linear density may be utilized for the other tests indicated in **9.3.1**, **9.3.2**, **9.3.3** and **9.3.4**.

10 CRITERIA FOR CONFORMITY

The lot shall be considered as conforming to the requirements of this standard if the following conditions are satisfied:

a) Average values of linear density and twist per metre, shall lie within the tolerance limits specified;

b) The coefficient of variation, percent (CV percent) of linear density does not exceed the maximum specified value;

c) The average quality ratio and the lowest quality ratio do not fall below the minimum specified values while the coefficient of variation, percent (CV percent) of breaking load does not exceed the maximum specified value;

d) The moisture regain, percent, and the oil content, percent does not exceed the maximum specified values; and

e) The corrected net mass of each package selected is not less than the contract mass.

Table 1 Requirements of Single Jute Yarn

(*Clauses* 6.1.1, 6.2.1 *and* 6.2.2)

Linear Density	Linear Density CV, Percent *Max*				Average Quality Ratio *Min*				Lowest Quality Ratio *Min*		Breaking Load CV, Percent *Max*			
Tex (Grist)	A	B	C	D	A	B	C	D	A	B	A	B	C	D
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
140-206 (4-6)	3.5	5	7	—	100	95	90	—	85	80	15	17	20	—
207-276 (6-8)	3.5	6	7	—	105	100	95	—	90	85	14	17	19	—
277-415 (8-12)	3	5	6	—	115	110	105	—	100	90	13	15	18	—
416-550 (12-16)	3	5	6	—	125	115	110	—	110	95	12	15	17	—
551-690 (16-20)	—	5	6	—	—	110	105	—	—	90	—	14	16	—
691-895 (20-26)	—	5	6	7	—	105	95	90	—	90	—	13	14	16
896-1240 (26-36)	—	—	6	7	—	—	90	90	—	—	—	—	14	16

Table 2 Requirements of Ply Jute Yarn

(*Clauses* 6.1.1, 6.2.1 *and* 6.2.2)

Linear Density	Linear Density CV, Percent *Max*				Average Quality Ratio *Min*				Lowest Quality Ratio *Min*		Breaking Load CV, Percent *Max*			
Tex (Grist)	A	B	C	D	A	B	C	D	A	B	A	B	C	D
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
276-413 (4×2-6×2)	3	4	6	—	105	100	95	—	90	85	14	16	19	—
414-550 (6×2-8×2)	3	4	6	—	110	105	100	—	95	90	13	15	18	—
551-827 (8×2-12×2)	2.5	3.5	5	—	125	115	110	—	105	95	12	14	16	—
828-1102 (12×2-16×2)	2.5	3.5	5	—	130	115	115	—	115	100	11	14	16	—
1103-1378 (16×2-20×2)	—	3.5	5	—	—	115	110	—	—	100	—	12	15	—
1379-1791 (20×2-26×2)	—	3.5	5	6	—	110	100	95	—	90	—	12	13	15
1792-2480 (26×2-36×2)	—	—	5	6	—	—	95	95	—	80	—	—	13	15

ANNEX A

(*Clauses* 6.4 *and* 6.6)

METHODS OF TEST

A-1 MOISTURE REGAIN

Determine the moisture regain, percent of each cone/spool by using a suitable moisture meter. Take two readings for each sample cone/spool from different places. Similarly determine the moisture regain percent of all the 10 cones/spools selected and find out average of all the 20 readings taken.

A-2 CORRECTED NET MASS OF PACKAGE

A-2.1 Determine the gross mass of each package in the test sample nearest to 100 g (W_g).

A-2.2 Remove the heavy cee/hessian cloth and polyethylene film from package and weigh them separately nearest to 10 g (W_p).

A-2.3 Find separately the total mass of empty cones/spools in each package, by first weighing at least five empty cones/spools nearest to 10 g and then determining the average mass of cones/spools and then multiplying the average mass of cones/spools with the total number of cones/spools present in each package (W_c).

A-2.4 Find the total tare (W_t) of each package by adding W_p and W_c.

A-2.5 Find separately the net mass (W_n) of each package under test as follows:

$$W_n = (W_g - W_t)$$

A-2.6 Determine the corrected net mass of each package under tests by the formula:

$$W = \frac{W_n \times (100 + \text{contract moisture regain percent})}{100 + \text{average moisture regain percent of packages (A-1)}}$$

ANNEX B

(Foreword)

COMMITTEE COMPOSITION

Jute and Jute Products Sectional Committee, TX 03

Organization	*Representative(s)*
Office of the Jute Commissioner, Kolkata	SHRI S. MAJUMDAR (***Chairman***)
New Central Jute Mills Co Ltd, Kolkata	SHRI AMALESH CHAKRABORTY
National Jute Manufacturers Corporation Ltd, Kolkata	SHRI A. GHOSH SHRI K. K. BOSE (*Alternate*)
Indian Jute Industries' Research Association, Kolkata	DR K. JAYACHANDRAN DR D. SUR (*Alternate*)
National Institute of Research on Jute and Allied Fibres (NIRJAFT), Kolkata	DR C. R. DEBNATH
Indian Jute Mills Association, Kolkata	CHAIRMAN, IJMA SHRI H. N. GHOSH (*Alternate* I) SHRI V. K. SHARMA (*Alternate* II) SHRI ARIJIT MITRA (*Alternate* III)
Cement Manufacturers' Association, New Delhi	SHRI A. R. SHENOY SHRI S. V. JOSHI (*Alternate*)
The Fertilizer Association of India, New Delhi	DR S. K. SAXENA
Export Inspection Council of India, New Delhi	SHRI K. J. SRIVASTAVA SHRI K. P. RAHA (*Alternate*)
Jute Manufactures Development Council, Kolkata	SHRI D. K. SARKAR
Eskaps (India) Pvt Ltd, Kolkata	SHRI SEKHAR GUHA SHRI ARABINDA KAR (*Alternate*)
The Jute Corporation of India Ltd, Kolkata	SHRI ALOK KUMAR KHASTAGIR
Rashtriya Chemical and Fertilizer Ltd, Mumbai	SHRI S. P. NAG
Food Corporation of India, New Delhi	SHRI S. B. SAROYA SHRI C. SHIVINNA (*Alternate*)
Ministry of Defence (DGQA), New Delhi	SHRI R. CHATTERJEE SHRI D. RAYCHOUDHURY (*Alternate*)
Directorate General of Supplies and Disposals, Quality Assurance Wing, New Delhi	SHRI A. K. SEHGAL SHRI M. M. DUBEY (*Alternate*)
Institute of Jute Technology, Kolkata	DR PRABIR RAY SHRI S. K. SETT (*Alternate*)
Anglo-India Jute Mills Company Limited, 24 Parganas (West Bengal)	SHRI J. P. SRIVASTAVA SHRI N. C. SARKAR (*Alternate*)
BIS Directorate General	SHRI R. K. DUA, Director & Head (TXD) [Representing Director General (*Ex-officio Member*)]

Member-Secretary
SHRI M. S. VERMA
Director (TXD), BIS

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act,* 1986 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Copyright

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards : Monthly Additions'.

This Indian Standard has been developed from Doc : No. TX 03 (0358).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110 002
Telephones : 323 01 31, 323 33 75, 323 94 02

Telegrams: Manaksanstha
(Common to all offices)

Regional Offices :

	Telephone
Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110002	323 76 17, 323 38 41
Eastern : 1/14 C. I. T. Scheme VII M, V. I. P. Road, Kankurgachi KOLKATA 700 054	337 84 99, 337 85 61, 337 86 26, 337 91 20
Northern : SCO 335-336, Sector 34-A, CHANDIGARH 160 022	60 38 43, 60 20 25
Southern : C. I. T. Campus, IV Cross Road, CHENNAI 600 113	254 12 16, 254 14 42, 254 25 19, 254 13 15
Western : Manakalaya, E9 MIDC, Marol, Andheri (East) MUMBAI 400 093	832 92 95, 832 78 58, 832 78 91, 832 78 92

Branches : AHMADABAD. BANGALORE. BHOPAL. BHUBANESHWAR. COIMBATORE. FARIDABAD. GHAZIABAD. GUWAHATI. HYDERABAD. JAIPUR. KANPUR. LUCKNOW. NAGPUR. NALAGARH. PATNA. PUNE. RAJKOT. THIRUVANANTHAPURAM.

Printed at New India Printing Press, Khurja, India